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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,660	03/15/2004	Ryan D. Bruneau	IMM101A (I103 2083.2)	8598

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EXAMINER	
DINH, DUC Q	

ART UNIT	PAPER NUMBER
2629	

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07/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/799,660	BRUNEAU ET AL.	
	Examiner	Art Unit	
	DUC Q. DINH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-34,37-48,50-56,60,61 and 63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-34,37-48,50-56,60,61 and 63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 14, 2009 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 28-34, 37-48, 50-56, 60-61 and 63 are rejected under 35 U.S.C. 102(e) as being anticipated by Engel et al (U.S Patent No. 5,781,172), hereinafter Engel.

In reference to claim 28, Engel discloses an apparatus, comprising:

a housing; (housing of the trackball shown in Fig. 2)

a sphere (30) positioned in the housing;

the sphere (30) being rotatable in at least one rotary degree of freedom without requiring movement of the housing, wherein the sphere rotates in response to a user's

digit directly contacting and manipulating the sphere (Engel discloses the rotationally sphere 10 is a trackball device; col. 8, line 46-47);

a sensor (13 and 14) coupled to the housing and configured to output sensor signals associated with a movement of the sphere in the at least one rotary degree of freedom by the user direct contact;

at least one roller (31 and 32);

an actuator (35, 36 45, 46) coupled to the housing and configured to output haptic feedback to the sphere (30) by vibrating the at least one roller, i.e. by an opposing forces of the negative and positive directions (col. 6, lines 36-64) the haptic feedback being based on the sensor signals (see col. 4, lines 4, lines 50-68);

In reference to claim 29, Engel discloses an inertial mass coupled to the actuator, the actuator and the inertial mass collectively configured to output the haptic feedback, the haptic feedback being an inertial haptic feedback (col. 3, lines 19-29) .

In reference to claim 30, Engel discloses wherein the haptic feedback is associated with a graphical representation displayed by a graphical user interface, a position of the sphere in the at least one rotary degree of freedom being associated with data values of a position of a cursor displayed in the graphical user interface the sphere in the at least one rotary degree of freedom being associated with data values of a position of a cursor displayed in the graphical user interface (see Fig. 5 and col. 36-56).

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In reference to claim 31, Engel discloses the haptic feedback is associated with a simulated interaction of a cursor and a simulated graphical object in a graphical user interface (see Fig. 5 and col. 36-56).

In reference to claim 32, Engel discloses wherein the haptic feedback is associated with data values associated with movement of a cursor between menu items (P1-P5) in a displayed graphical menu (see Fig. 5).

In reference to claim 33, Engel discloses wherein the haptic feedback includes a force sensation, the force sensation being at least one of a pulse, a vibration, and a texture (col. 3, lines 30-38).

In reference to claim 34, Engel discloses the haptic feedback is a vibrotactile haptic feedback the is provide by a moving element, i.e. X motor 55, Y motor 56 in Fig. 3.

In reference to claim 37, Engel discloses a microprocessor (37) coupled to the sensor and the actuator, the microprocessor being configured to send haptic feedback signals to the actuator based on host commands received from a host computer, the microprocessor further configured to send locative data to the host computer, the locative data being associated with the sensor signals and the movement of the sphere (col. 4, line 50 - col. 5, lines 5).

In reference to claim 38, Engel discloses the actuator is configured to output the haptic feedback, the haptic feedback being associated with a command received from a host computer (see col. 6, lines 36-56).

In reference to claim 39, Engel discloses an apparatus, (see rejection of claim 28) comprising:

a housing;

a sphere positioned in the housing, the sphere being rotatable in at least one rotary degree of freedom without requiring movement of the housing, wherein the sphere rotates in response to a user's digit directly contacting and manipulating the sphere;

a sensor coupled to the housing and configured to output sensor signals associated with a movement rotation of the sphere in the at least one rotary degree of freedom by the user' s direct contact:

at least one roller (30, 32) coupled to the sphere;

an actuator coupled to the housing, the actuator being configured to output haptic feedback to the sphere by vibrating the at least one roller, i.e. by an opposing forces of the negative and positive directions (col. 6, lines 36-64);

at least one compliant element (X ACC 45) coupled to the housing and the actuator (X brake 35), the at least one compliant element being configured to amplify the haptic feedback. (see col. 4, line 57 – col. 5, line 5)

In reference to claim 40, Engel discloses wherein the at least one compliant element includes a compliant coupling between the housing and a support for the housing (X ACC 45 is coupled to the housing including a support for the housing, i.e. the bottom case of the housing).

In reference to claim 41, Engel discloses wherein at least a portion of the sphere extends from the housing (trackball 30 has a portion of the sphere extends from the housing, the haptic feedback being output approximately along an axis substantially normal to a point of the sphere (see Fig. 2).

In reference to claim 42, wherein the haptic feedback is associated with a simulated interaction of a cursor with a simulated graphical object displayed in a graphical environment (see rejection of claim 31).

In reference to claim 43, Engel discloses an inertial mass coupled to the actuator, the actuator and the inertial mass collectively configured to output the haptic feedback, the haptic feedback being an inertial haptic feedback. (see rejection of claim 29)

In reference to claim 46, Engel discloses a microprocessor coupled to the sensor and the actuator, the microprocessor being configured to output haptic feedback signals to the actuator based on host commands received from a host computer microprocessor further being configured to send locative data to the host computer, the locative data being associated with the sensor signals and the movement of the sphere. (see rejection of claim 37).

In reference to claim 47, Engel discloses the actuator being a first actuator, the apparatus further comprising a second actuator configured to output a second haptic feedback in the at least one rotary degree of freedom (see second actuator 35 and 36 of Fig. 2).

In reference to claim 48, Engel discloses wherein said second actuator is a passive brake configured to provide a resistance to rotation of the sphere (35 and 36 are X and Y brake for the sphere 30).

In reference to claim 50, Engel discloses wherein the haptic feedback is output in response to a movement of an inertial mass coupled to an actuator (see rejection of claim 29).

In reference to claim 51, Engel discloses an apparatus, comprising:

a sphere positioned within a housing;

a sensor configured to output sensor signals associated with a movement of the sphere in the rotary degree of freedom by directly contacting the sphere via a user' s digit, wherein rotation of the sphere occurs without movement of the housing;

at least one roller (30, 32) coupled to the sphere; and

an actuator configured to output haptic feedback to the sphere, by vibrating the at least one roller (see rejection of claim 28) the haptic feedback being based on the sensor signals (see rejection of claim 28 and see Fig. 2).

In reference to claim 52, Engel discloses an inertial mass coupled to the actuator, the actuator and the inertial mass collectively configured to output the haptic feedback, the haptic feedback being an inertial haptic feedback (see rejection of claim 29).

In reference to claim 53, Engel discloses, wherein the haptic feedback is associated with a graphical representation displayed by a graphical user interface, a position of the sphere in the at least one rotary degree of freedom being associated with

data values of a position of a cursor displayed in the graphical user interface (see Fig. 5 and col. 6, lines 21-55).

In reference to claim 54, Engel discloses wherein the haptic feedback is associated with a simulated interaction of a cursor and a simulated graphical object in a graphical user interface. (see Fig. 5 and col. 6, lines 21-55)

In reference to claim 55, Engel discloses wherein the haptic feedback is associated with data values associated with movement of a cursor between menu items in a displayed graphical menu.(see rejection of claim 32).

In reference to claim 56, refer to the rejection of claim 28.

In reference to claim 60, refer to the rejection of claim 37.

In reference to claim 61, refer to the rejection of claim 38.

In reference to claim 63, Engel discloses in Fig. 3, an apparatus comprising:

a housing;

a sphere positioned in the housing, the sphere being rotatable in at least one rotary degree of freedom without requiring movement of the housing, wherein the sphere rotates in response to a user contact with the sphere;

a sensor coupled to the housing and configured to output sensor signals associated with a rotation of the sphere in the at least one rotary degree of freedom by the user contact; and

an actuator (51, 54, 56) coupled to the housing, wherein the actuator comprises at least one moving portion (51) that is configured to output haptic feedback to the sphere by impacting the sphere with the at least one moving portion.

Response to Arguments

4. Applicant's arguments with respect to claims 28-34, 37-48, 50-56, 60-61 and 63 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q. DINH whose telephone number is (571)272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE can be reached on (571)272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Duc Q Dinh/

Primary Examiner, Art Unit 2629